Determinants of Foreign Direct Investment Entry into China

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SUMMARY

In the quest to expand profits, a large number of firms eventually seek access to international markets. This paper attempts to determine the factors that influence whether a firm will choose to invest in a foreign market. This is an important research question for several reasons. First of all, the empirical results are based on firm-level data whereas previous studies have relied on industry-level data. Also, China has recently become the largest recipient of foreign direct investment. Once the determinants of foreign direct investment are better understood, firms will have a clearer understanding of the process. The main results are as follows. The marginal impact of an increase in the US market share of the parent firm on the probability of entry is positive, both in the overall sample and in the case of the three industries we have analyzed. In the case of the R&D ratio, while the marginal impact on the probability of entry is negative in the case of the overall sample, this result appears to be mainly driven by the large negative effect of the R&D ratio on entry in the telephone and telegraph apparatus industry. The results in the case of the location advantage are mixed.

Chapter 1

Introduction

Profit-maximizing firms constantly look to increase revenue and reduce costs. One of the means through which a firm can increase revenue is by enlarging their customer base. Similarly, producers can reduce costs by broadening their supplier base to include firms that can provide inputs at lower prices. These two objectives are accomplished through marketing, advertising, training, recruiting, partnering, etc. Eventually, the marginal cost of obtaining a new domestic customer increases to the point where a firm will seek expansion into foreign markets. Also, firms may be able to find inputs at lower prices from overseas suppliers. The combination of these two factors leads firms to seek positions in overseas markets.

Before expanding into foreign markets, the firms must carefully weigh the options. Trade barriers, taxation and legal systems, cultural and linguistic differences are all obstacles that a globalizing firm must surmount. Before establishing in a foreign country, the firm must ensure that the method of expansion will allow it to compete against firms in the foreign country that do not face these obstacles.

Similarly, firms often face complex trade barriers that add to their production costs. By locating in foreign countries and/or establishing relationships with foreign suppliers, firms can reduce their exposure to these costs. Once again, a firm must choose its method of investment wisely or else the potential input cost savings could be negated by the increased cost of doing business abroad.

Although there are benefits to entering into foreign markets, these moves are not

without risk and cost. In their drive to reduce exposure to both, firms seek to internationalize through the most efficient means available. The process is complicated by the cultural, political, legal, economic, and social constructs of the foreign market in which the firm wishes to expand.

In recent years, the costs associated with foreign investments have declined sharply. This is largely due to the enormous investments in global infrastructure (e.g. reduced transportation and telecommunication costs). As the fixed costs of going global fall, smaller firms are more likely to make the financial commitment necessary to operate in foreign markets. Still, only 25 firms are responsible for forty percent of US FDI outflow.

The data from this paper focuses on U.S. firms who have chosen to invest in the People's Republic of China (PRC). FDI has been increasing in the PRC over the past decade. As of the third quarter in 2002, China surpassed the Unites States to become the most popular destination for FDI according to a survey conducted by A.T. Kearney, an economic research firm. When the Chinese government opened its markets to foreign investors, many realized that the economy had enormous growth potential. After being hamstringed by central planners, market forces were unleashed resulting in a staggering growth rate. This has drawn worldwide attention from firms who wish to capitalize on the advantages offered by a burgeoning economy. One American credit agency claims that annual FDI in China will reach $100 billion by 2005 (Sun, Tong et al. 2002).

Once a firm has made the decision to enter a foreign market, it must then determine its mode of entry. There are many options available. Some may choose to export their goods. Other firms may opt to license their trademarks and other proprietary

information to overseas firms in return for compensation. Finally, some firms will choose a more direct form of investment. This option involves creating subsidiaries, branches, or franchises in the foreign country. The firm could also acquire foreign firms or enter into joint ventures.

In this paper, I wish to concentrate on those firms that have chosen to invest directly in China. This form of expansion into new markets is often called FDI. Officially, the US Department of Commerce characterizes FDI as a ten percent or greater interest taken in a foreign entity by a US firm, citizen, organization, or affiliated group. More generally, FDI occurs when a firm invests in a facility to produce and/or market a good or service. This paper identifies and investigates the variables the impact a firm's decision to invest in China.

Chapter 2

Literature Review

The literature concerning foreign investment is extensive. Many studies have been published that attempt to explain the variables that are pertinent to the decision of where, when, and how to invest. This section will summarize some of the key papers that examine the benefits of FDI, the decision strategies, the economic environment in China as it pertains to FDI, and the various mode of entries and their ramifications.

Foreign investments arise from the need for companies to pursue growth. Once a firm has exhausted its domestic resources, it faces the challenge of evaluating the many options for overseas investment. Two unique means of evaluating this decision have been developed. First is the risk-adjusted return on investment. However, studies have shown that firm behavior often conflicts with the predictions of this method. This led to the second idea of how firms choose to invest: the OLI framework.

In this section, the paper explores the motivation to invest overseas, the various modes of entry that are available, the decision strategies, the policy environment in China, and the current empirical literature concerning FDI in China.

2.1 Why Invest Overseas?

In his dissertation, Hymer (1976) noted two reasons why organizations seek to operate overseas. First, multinationals seek to remove competition when facing firms that sell in the same market. Also, a multinational will attempt to capitalize on returns available in foreign markets. In addition, he found that foreign investment is not driven by differences in interest rates. If that were the case, we would see capital flow to certain

foreign markets. Instead, we observe foreign investment coming from firms that operate within certain industries. This suggests that there are certain industry characteristics that make overseas investment more attractive.

Since this study, foreign direct investment has assumed a sizable following in the literature. There is much empirical evidence to support the proposition that firms who invest overseas do so to gain access to foreign markets and exploit factor-cost differences (Hanson, Mataloni et al. 2001). The potential in foreign markets is often so great that firms will often consider foreign markets as their primary source of future sales and profit gain (Buckley and Casson 1976; Mudambi and Mudambi 2002).

FDI also benefits those countries that host multinational operations. In fact, many developing countries will actively campaign to attract foreign investment (Qiu and Tao 2001). This is done in a variety of ways. Local governments will often boast that their local markets hold vast potential. They will give tax incentives and create special economic zones. Some will even go so far as to write new laws or change old ones to protect foreign companies from contractual risks and local competition. These actions are untaken so that foreign companies will introduce new technology, business practices, and competition into the local markets.

These potential gains are not without risk. Companies must carefully evaluate the route they will take to expand internationally. According to Mudambi and Mudambi (2002), a firm must make several important decisions in order to be successful. First, the company must decide which foreign country they should enter. Second, a firm must decide what products to produce in the new market. For instance, a firm may choose to extend its current operations or expand into new lines of business. Finally, a firm must

select the mode of entry that best suits its particular circumstances. Throughout this decision-making process, it is important to select the best course of action. It is often cost prohibitive to alter these decisions once they have been executed (Mattoo, Olarreaga et al. 2002).

2.2 Modes of Entry

At this point it is appropriate to describe the various modes of entry into a foreign market through FDI. There are basically four ways in which a company can enter a foreign market (Agarwal and Ramaswami 1992). They can do so through exporting, licensing, sole ventures, and joint ventures. Each mode of entry is associated with potential gains and downside risks. When a country chooses to export, it avoids the high-startup costs associated with some of the other options. Also, a firm that enters a market through exports faces different legal circumstance than other modes of entry. Because these goods compete in the local market against the domestic industries, the benefits to the importing country are limited. The addition to the market brings variety and choice to the consumers. Yet, those firms who compete against imports will rally against these firms by demanding protectionist intervention, such as tariffs and non-tariff barriers. Therefore, the potential gains to the exporting firm can be limited. While exporting allows a firm to retain control over its operations, it is often difficult to retain control of foreign marketing and distribution channels. Depending on the industry, this can be a significant limitation. But, the risks associated with exporting are low. Therefore firms that are risk-adverse or have limited resources often choose to enter foreign markets through exporting.

Another mode of entry is licensing. Licensing offers the least amount of control over business practices. Also, there are significant risks that proprietary technology and business practices may face exploitation by competing firms. Unless a foreign government enacts legal barriers to such appropriation of intellectual property, these risks can be dissuasive. Because local firms conduct most of the operations, the return on investment is low. Yet, many firms find this mode of entry suitable when their technology is hard to duplicate and because resource requirements are minimal.

The final two modes of entry are joint ventures and sole ventures. Joint ventures are often seen in circumstances where there is significant market potential combined with high risks. By entering a joint venture with a local firm, the foreign firm can mitigate these risks. The local firm will provide insight into local business practices, legal systems, and cultural differences. The foreign firm can bring innovation, advanced technology, and financial resources to the table. The risks, resources, control, and returns attained by the foreign firm depend on the equity stake that is supplied.

Sole ventures allow a company to retain the highest level of control over its business practices. To retain this level of control requires significant resources. In addition, the investing firm assumes all of the risk associated with the venture. If the company is successful with this mode of entry, it should reap the greatest returns.

The modes of entry and their associated levels of risk, return, control, and resource requirements are summarized in Table 1 of the Appendix.

2.3 Decision Strategies

The key decision of how to select a mode of entry has been explored in the literature. Two main schools of thought have arisen. First, several studies suggest that firms evaluate foreign market potential using a transaction cost approach (Hymer 1976). These studies claim that the investing firm will estimate the risk-adjusted return associated with each mode of entry and select the option that provides the highest return.

Others suggest that the OLI (Ownership – Location – Internalization) framework put forth by Dunning (1980) provides a useful way of evaluating the process by which firms invest overseas. They note weaknesses with the transaction cost approach. Many instances appear in the data that show that companies do not always follow the path that transaction cost analysis would imply to be optimal (Agarwal and Ramaswami 1992). It is unlikely that these firms are unable to properly calculate transaction costs. In fact, the firms are more likely to have the best handle on their financial situation and the market picture. Therefore, there must be some other reasoning behind a firm's decision to act contrary to the transaction cost analysis.

Dunning recognized that ownership and location advantages that had been explored by earlier studies (Rugman 1979; Hirsch 1976; Vernon 1966; and others) suggest possible actions that a firm will take when deciding to venture overseas. Ownership advantages are inherent to the firm itself. Examples include trademarks, copyrights, proprietary technology, entrepreneurship, and innovative spirit. All aspects of the firm that allow it to exceed its competition are considered ownership advantages. It is this set of advantages that a firm will use to propel itself into the international realm.

When a firm considers itself endowed with enough advantages to move overseas,

it must carefully select the foreign market in which it will operate. The foreign market will have certain location advantages. These include natural resources, labor availability, access to markets, the market structure itself, government policies, and other aspects of a location that effect the ability of firms to bring good and services to the marketplace. While there are advantages associated with overseas markets, there are also challenges that foreign firms face when entering these markets. Cultural, linguistic, and other climate differences hamper investing firms. To be successful, a company must have enough ownership advantages to overcome these obstacles and compete against local firms (Hirsch 1976).

Dunning (1980) introduces a third advantage by identifying the advantage of internalization. He observes that firms use the ownership advantage to decide whether they should expand internationally. And, the location advantages dictate the decision to export or invest directly. Yet, neither advantage explains why firms choose sole or joint venteurships over licensing its firm specific advantages. There must be an advantage to holding these advantages within the company. This is known as the internalization advantage: the advantage of maintaining internal control over firm specific assets.

It is important to note how each advantage relates to the various modes of entry available to the parent firm. For instance, risk and return are related to the location advantage. Resource requirements are related to the ownership advantages. And, location advantages are leveraged through the use of control. The relationship of the ownership, location, and internalization advantages to the modes of entry are summarized in Table 1 of the Appendix.

2.4 Chinese FDI Policies and Background

In this paper, I wish to explore the decisions that firms face when entering the People's Republic of China (PRC). China has a unique history with regards to foreign direct investment. It was late to open itself to investment by foreign companies, and even then, investment took place under significant restrictions (Fan 2002). The first legislation paving the way for foreign investment was the "Law of the People's Republic of China on Joint Ventures Using Chinese and Foreign Investment" enacted in 1979 (Sun, Tong et al. 2002). By 1984, there were 18 special economic zones (SEZs) where foreign investors could conduct operations. These investments were focused on small assembly and pre-export activities. The Chinese government required that investment be funded from within the PRC. This severely hampered the flow of capital into the country.

In 1986, the Chinese government passed the PRC Law on Foreign Enterprises. This legislation granted sole ventures legal rights in China (Sun, Tong et al. 2002). Furthermore, the government offered special incentives to foreign companies to make China a more attractive location. Lengthy approval processes were shortened when the government delegated approval authority to local governments. These additional changes are known as the "Twenty-two Regulations" (Branstetter and Feenstra 1999).

After the tragic incident in Tiananmen Square, foreign firms avoided the PRC. They perceived the risk to outweigh the benefits that the Chinese market held. To counteract these notions, the Chinese government enacted additional legislation to reduce taxation and offer other incentives. Aside from the hiatus surrounding the shootings at Tiananmen Square, FDI in China has steadily increased at impressive rates. Currently, China is the largest recipient of foreign investment. Though they were late to open their

doors, the Chinese have more than thrived in the competition for foreign dollars. This indicates that the location advantages that are unique to China are significant.

Within China, there are different provinces. These regions all have unique characteristics. (Sun, Tong et al. 2002) note that there is an uneven distribution of foreign investment across these regions within China. Therefore, there must be region-specific advantages that make some provinces more attractive to multinational firms. Young (1997) determines that regions in China are distinct. They have different economic perspectives and engage in limited trade with each other.

Overall, China is a complex marketplace. Though there has been much emphasis on the liberalization of the PRC economy, companies must continue to negotiate hurdles to success. As China continues to integrate into the global economy, pass favorable legislation, and offer financial incentives to investors, firms will find the resources and advantages accessible through direct investment in the PRC marketplace attractive.

2.5 Empirical Research on FDI in China

Because of its unique market structure and its rapid growth of foreign investment, China has attracted much interest. Numerous empirical works have examined FDI in China. A majority of these papers have focused on the patterns of FDI rather than the determinants (Fan 2002). This section will present a selection of recent papers, their methodology, and key findings.

Liu and Song (1997) describe the location advantages that make China appealing to firm who seek to invest overseas. One of the key factors that create this appeal is its abundance of labor resources. In addition, China has access to vast energy and mineral

endowments. Combined with a burgeoning marketplace, growing infrastructure, and government commitment to multinationals, China has "the largest potential market in the world" (p. 81).

Recognizing these opportunities, Zhao and Zhu (1998) investigated the factors that contribute to foreign equity share within international joint ventures. Using data from the Chinese government, they confirmed that investment behavior varies among industries according to the level of concentration. Oligopolistic industries tend to have higher foreign equity shares due to the ability of the foreign firm to capture much of the market. In other words, there are high internalization advantages due to market characteristics of certain industries.

Other research has attempted to track changes in FDI determinants over time (Sun, Tong et al. 2002). There is empirical evidence suggesting that factors such as wage rate, GDP, infrastructure, labor quality, and political risk impact a firm's decision to invest. Furthermore, the impact of these factors changes over time. Due to data limitations, this study did not separate firms according to industry. Furthermore, the study made no attempt to incorporate the effects of the political atmosphere or tax structure on foreign investment. This could be problematic. For instance, they find that labor wages has a positive relationship to FDI until 1991. Then, the relationship changes to a negative one. This may be explained by the change in climate due to the Tiananmen Square incident and the subsequent reestablishment of investor confidence.

Another important consideration is the desire of the Chinese government to balance the benefit of FDI against the potential losses of state-owned enterprises. This notion has been tested by Branstetter and Feenstra (1999) using data from *Chinese*

Statistical Yearbooks and the Chinese Customs General Administration. The study found that the weights that the government places on consumer welfare versus the output of state-owned enterprises has increased over time, but there is still a significant interest in protecting Chinese-owned industry from competition via foreign investment.

In an effort to determine which investment mode is most attractive to U.S. firms investing in China, Gleason, Lee et al. (2002) gathered a dataset of expansions into China. This data came from announcements in the Wall Street Journal and LEXIS/NEXIS by publicly traded U.S. firms. The authors attempted to determine the impact that these announcements had on the parent firm's stock price. Results showed that investors tend to prefer the joint venture mode of entry into China. Of course, there are several issues that cast doubt on the result of this empirical analysis. Primarily, it is difficult to isolate the impact that the announcement had on the stock price. Other factors may have contributed to the fluctuation of the firm's market value.

Though there have been many papers published regarding China and its ability to attract FDI, there are still many issues that need to be addressed. Specifically, there is little research regarding the determinants of FDI. And, few papers make use of firm-level data to support their hypotheses.

This chapter has explored past efforts to examine FDI in China. The rest of this paper is organized as follows: Chapter 3 explains the methodology, hypotheses, and data used in the empirical analysis. Then, Chapter 4 examines the results from this empirical work. Finally, Chapter 5 draws conclusions from the study and suggests areas of limitation that merit further inquiry.

Chapter 3

Methodology, Hypotheses, and Data Description

In this paper, I shall examine the factors that influence a firm's decision to invest overseas. Specifically, I want to examine a company's decision of whether or not to invest in China. The analysis will rely heavily on the OLI Framework mentioned above.

This study draws data from two sources: the Directory of American Companies Operating in Foreign Countries (DACOFC) and the COMPUSTAT database developed by Standard and Poor. The DACOFC conducts an annual survey of foreign-owned enterprises. From this it is possible to ascertain the names and contact addresses of foreign-owned firms in China. This source also provides information concerning the parent firm and the mode of entry. Other information such as number of employees, local revenue, local sales, etc. is incomplete. Therefore, another source of data is required to evaluate the parent firms. The information in the COMPUSTAT database filled this void. COMPUTSTAT contains information on publicly traded firms over a period ranging from 10 to 50 years. By limiting our focus to those firms that are traded publicly, we now have information concerning the entry firms, the parent firms, the mode of entry, parent sales, advertising, R&D, and number of employees.

Furthermore, from the DACOFC data we can note when a company has previously entered into China (perhaps in an alternate location or under a different charter). To compare those factors that caused entry, I also needed a sample of firms who chose not to enter. The non-entry group consists of all firms who share the SIC codes of

the parent firms in the sample. Hence, we also know the industry groups to which each non-entry firm, parent firm, and, in most cases, entry firm belong.

Using this sample, we can look at the characteristics of firms who choose to operate in China through direct investment. As pertains to the OLI Framework, we hold the location advantage aspect constant by only looking at the potential for entry into this market. Using the information regarding the province of entry, we can later investigate how region-specific advantages affect firms. By focusing this study on China, we hold constant the market potential and risk aspects of foreign investment. This allows us to concentrate on the ownership and internalization advantages and how they impact the process.

Ownership advantage is often measured in terms of the size of the firm (Agarwal and Ramaswami 1992). Firms that are large, in terms of sales and number of employees, tend to have more resources than their competitors. Previously, we associated a firm with vast resources as likely to enter a foreign market as a sole venture. This is due to the fact that large companies are likely to have the backing that allows them to absorb the risk associated with going it alone. We would expect a company with smaller sales and numbers of employees to have a lower probability of entry into China.

Control allows firms to exploit their ownership advantages to a greater extent than allowing these advantages to operate through other firms. Therefore, a company with high internalization advantages will seek to enter a foreign market through sole ventures rather than joint ventures. Furthermore, these firms will avoid licensing their advantages to outside companies. This avoidance allows the firm to retain the greatest amount of control over their assets. There are circumstances where foreign companies with high

internalization advantage will enter joint ventures. If the location advantages include legal ramifications from copyright infringement and protection of trademarks, the risks to proprietary information are reduced. Firms will be more likely to enter. China does not have the best record of such protection (Sun, Tong et al. 2002). However, there are many firms who lack the resources to commit to a sole venture that will accept these control risks in order to gain access to the potential returns to be gain from the PRC market.

This study draws upon the data to test the factors that determine whether a foreign firm will choose to invest in China. Several variables are used to evaluate these factors. A summary of the variables and their sources is available in Table 2 of the Appendix.

This model looks at the decision to enter China by parent firms. There are three potential advantages to a firm entering the PRC. The ownership advantage is captured by the US market share of the parent firm. This indicates the dominance of the firm among its peers. We would expect a positive relationship between the likelihood of entry and market share. Second, the internalization advantage of firms is represented by the amount of research and development expended by the parent as a percentage of the parent's overall sales. Parent firms with high levels of research and development are more likely to place high value on their proprietary knowledge and have firm specific proprietary effects that they can exploit through FDI. Hence firms with high R&D ratio may have high FDI. However, in China, there is evidence regarding inadequate intellectual property protection and this may lead to a reluctance on the part of firms to invest in China. Therefore, the impact of the R&D ratio on the probability of entry in the PRC is ambiguous and remains an empirical question. Finally, potential entrants are also

concerned with the location advantage of operating in China such as the GDP and GDP growth rate in China relative to the US.

Due to the dynamic nature of the legal system in China with respect to foreign investment, it is imperative that empirical studies account for this changing environment. This inquiry attempts to do so using a dummy variable. The variable, REG22, accounts for the passage of the "Twenty-two Regulations" in 1986.

The model incorporates the industry type, firm characteristics, market characteristics, and prior entry information to determine if the firm is likely to enter China through foreign investment:

$$\underset{0 \text{ or } 1}{ENTRY} = f(CONC, \text{RDSAL}, \text{EMPSAL}, \text{REG22}, \text{GDPRAT}, \text{GRTRAT})$$

ENTRY is a binary variable. Using a PROBIT model solved with maximum likelihood estimation, it is possible to interpret this variable as the probability that a parent firm will choose to enter the Chinese market using FDI.

Chapter 4

Results

The results of the analysis are presented in Tables 3-6. Table 3 contains the results for the entire sample. However, in the overall sample, only a few firms choose to enter China. This diminishes the model's ability to account for the variables that impact entry. Therefore, three additional regressions (Tables 4-6) were performed to focus on the three industries with the highest number of entries, viz. telephone and telegraph apparatus, pre-packaged software, and computer integrated systems design (CISD).

In Table 3, with respect to the ownership advantage's influence on entry, the results show that there is a positive relationship between market dominance and probability of entry. A unit increase in the US market share of the parent firm increases the probability of entry into PRC by 2.17 percentage points. With respect to the industry specific regressions, this positive relation still holds, although the magnitudes of the marginal effects vary a great deal. In the telephone and telegraph industry a unit increase in the US market share of the parent firm increases the probability of entry into PRC by 1.61 percentage points. The corresponding figures for the prepackaged software and CISD industries are 0.001% and 2.32% respectively.

A unit increase in the ratio of R&D to sales diminishes the likelihood of entry into the PRC by 0.64 percentage points. One likely explanation is that the negative impact of poor intellectual property protection in the PRC on FDI outweighs the positive impact of exploiting firm-specific knowledge developed through R&D by investment in the PRC. However, the industry specific results are varied, with the R&D ratio having a positive marginal impact on entry in the prepackaged software and CISD sectors (close to zero in

the case of the former and 0.02 percentage points in the case of the latter) and a negative marginal impact of 10.2 percentage points in the case of the telephone and telegraph industry. Hence the negative marginal impact of the R&D ratio on the probability of entry appears to be influenced a great deal by what is occurring in the telephone and telegraph industry.

The proxies for location advantage, the ratio of GDPs in PRC and the US and the ratio of GDP growth rates in PRC and the US, had mixed results, and where significant, the marginal impact was still very small. This is contrary to what was expected. One explanation is that location advantages are more important in deciding which foreign market to enter, once the decision to invest overseas has been made. The high GDP growth rate in the PRC relative to the US by itself may not provide parent firms with a strong incentive to expand overseas.

While the "Twenty-two Regulations" does report a non-zero value in both the overall and industry-specific regressions, the effect on entry is minimal. This is most likely due to the fact that few firms entered China before this legislation, and a small number of firms entered immediately afterwards. Therefore, this legislation was well established and had little effect on the majority of companies who chose to invest in recent years.

Overall, the results show that firms do consider the ownership, location, and internalization advantages of China when deciding whether it is prudent to invest. Due to the disparate results among industries, it is likely that the decision to invest is highly dependent on the characteristics of the industry in which the parent firm operates. Other factors that could be considered (but have not been considered) could include number of

firms in the industry that are in the PRC, the parent's prior experience in China, and how diversified the firm's activities are in the PRC.

Chapter 5

Conclusion

This paper has accomplished several goals. By using firm-level data, it shows that potential entrants into the Chinese market weigh ownership, location, and internalization factors when making investment decisions. It also indicates that there are industry-specific factors that also play a determining role. With so much foreign direct investment activity in China at this time, it is important to examine the strategy that parent firms employ when deciding whether to enter the market.

The main results are as follows. The marginal impact of an increase in the US market share of the parent firm on the probability of entry is positive, both in the overall sample and in the case of the three industries we have analyzed. In the case of the R&D ratio, while the marginal impact on the probability of entry is negative in the case of the overall sample, this result appears to be mainly driven by the large negative effect of the R&D ratio on entry in the telephone and telegraph apparatus industry.

There are several limitations with this research and its methodology. First of all, the scope of the project is limited. The data only represents those companies who decide to enter China. It would be useful to examine an array of counties to determine not only if a company decides to invest overseas but also what location characteristics are most appealing. Second, much of the story behind overseas investment is not captured by financial data. It would be useful to survey parent firms to gather information pertinent to overseas entry. Finally, firms may be driven to invest when they observe their competitors moving into overseas markets. The data in this study did not include this information.

Future studies can expand upon this paper by looking specifically at the mode of entry that companies select once they decide to enter foreign markets through FDI.

APPENDIX

Table 1: Modes of Entry

Entry	Mode	Risk	Return	Control	Resources
No	No investment	None	None	N/A	None
Yes	Exporting	Low	Low	Varies[1]	low
	Sole venture	High	High	High	High
	Joint venture	Flexible[2]	Flexible[2]	Flexible[2]	Flexible[2]
	Licensing[3]	Low[4]	Low	Low	Low
OLI Framework		Location		Internalization	Ownership

[1]High operational control; low marketing control
[2]Depends on the amount of equity the investing firm supplies
[3]Least control
[4]Susceptible to loss of proprietary technology and information

Table 2: Variable List

Variable	Definition	Source
SALES	Sales (in millions of dollars) by parent firm	COMPUSTAT
CONC	US market share (sales of parent firm as percentage of all firm with the same SIC code)	COMPUSTAT
EMPSAL	Number of employees (in thousands) of parent firm per sales by parent firm	COMPUSTAT
RDSAL	Research and development expenditures as percentage of SALES	COMPUSTAT
REG22	Dummy variable indicating if entry occurs after "Twenty-two Regulations" in 1986 has occurred	
GDPRAT	Ratio of PRC to US GDP	World Bank
GRTRAT	Ratio of PRC to US GDP Growth Rate	World Bank
SIC	Industry classification of parent firm	COMPUSTAT

Table 3: Regression results

Variable	dF/dx (robust std. err)	Coefficient (robust std. err)
US Market Share (CONC)	0.0217***	4.289***
	(0.0041)	(0.191)
R & D/Sales (RDSAL)	-0.0064***	-1.271***
	(0.0008)	(0.074)
Employees/Sales (EMPSAL)	-0.1556***	-30.711***
	(0.0261)	(1.220)
Twenty-two regulations (REG22)	-0.0008***	-0.167***
	(0.0002)	(0.020)
Ratio of PRC to US GDP (GDPRAT)	-0.0124	-2.442
	(0.0158)	(3.080)
Ratio of PRC to US GDP growth (GRTRAT)	-0.000029*	-0.00576*
	(0.000017)	(0.00314)

* $p < 0.1$
** $p < 0.05$
*** $p < 0.001$

Table 4: Regression results (Telephone & Telegraph Apparatus)

Variable	dF/dx (robust std. err)	Coefficient (robust std. err)
US Market Share (CONC)	0.0161*	-0.534*
	(0.011)	(0.321)
R & D/Sales (RDSAL)	-0.102**	-3.209**
	(0.031)	(1.093)
Employees/Sales (EMPSAL)	0.629**	19.774**
	(0.234)	(6.401)
Twenty-two regulations (REG22)	0.00271	0.0847
	(0.00889)	(0.272)
Ratio of PRC to US GDP (GDPRAT)	0.0508	1.600
	(0.969)	(30.462)
Ratio of PRC to US GDP growth (GRTRAT)	-0.0001698	-0.005
	(0.00107)	(0.034)

* $p < 0.1$
** $p < 0.05$
*** $p < 0.001$

Table 5: Regression results (Prepackaged Software)

Variable	dF/dx (robust std. err)	Coefficient (robust std. err)
US Market Share (CONC)	0.0000126*** (0.0000274)	9.122*** (2.016)
R & D/Sales (RDSAL)	1.90e-6* (0.4.12e-6)	1.379* (0.718)
Employees/Sales (EMPSAL)	-0.0003*** (0.0007)	-248.610*** (45.0244)
Twenty-two regulations (REG22)	5.28e-7 (1.37e-6)	0.397 (0.569)
Ratio of PRC to US GDP (GDPRAT)	0.0000714 (0.0001909)	51.880 (56.699)
Ratio of PRC to US GDP growth (GRTRAT)	2.57e-7 (5.41e-7)	0.187 (0.225)

* $p < 0.1$
** $p < 0.05$
*** $p < 0.001$

Table 6: Regression results (Computer Integrated Systems Design)

Variable	dF/dx (robust std. err)	Coefficient (robust std. err)
US Market Share (CONC)	0.0232*** (0.0246)	134.619*** (23.190)
R & D/Sales (RDSAL)	0.000223** (0.000252)	1.295** (0.499)
Employees/Sales (EMPSAL)	-0.0421*** (0.0447)	-243.886*** (32.694)
Twenty-two regulations (REG22)	-0.000123 (0.0002025)	-0.570 (0.386)
Ratio of PRC to US GDP (GDPRAT)	-0.000716 (0.000582)	-4.150 (36.858)
Ratio of PRC to US GDP growth (GRTRAT)	0.0000203* (0.0000236)	0.118* (0.0583)

* $p < 0.1$
** $p < 0.05$
*** $p < 0.001$

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